Claims

1. An exhaust-gas purification catalyst to be used close to the engine, for the purification of the exhaust gases from an internal combustion engine, comprising palladium on aluminum oxide and barium oxide, wherein barium oxide and palladium are together deposited on the aluminium oxide support and the average particle size of the palladium crystallites present on the support is between 3 and 7 nm.

2. An exhaust gas purification catalyst comprising a monolithic honeycomb carrier made of ceramic or metal, having deposited thereon as a first catalytically active coating the catalyst of claim 1.

3. An exhaust-gas purification catalyst comprising a monolithic honeycomb carrier made of ceramic or metal, having deposited thereon as a first catalytically active coating in a concentration of between 50 and 200 grams per litre volume of the honeycomb carrier, the catalyst of claim 1.

4. The catalyst according to claim 3 wherein said catalyst contains 1 to 10 g/l palladium, 45 to 180 g/l aluminum oxide and 5 to 20 g/l barium oxide.

5. The catalyst according to claim 2, further comprising, a second catalytically active coating on said honeycomb carrier containing platinum and rhodium on aluminum oxide as well as an oxygen-storing component and additional aluminum oxide applied to the first catalytically active coating.

6. The catalyst according to claim 3, further comprising, a second catalytically active coating on said honeycomb carrier containing platinum and rhodium on aluminum oxide as well as an oxygen-storing component and additional aluminum oxide applied to the first catalytically active coating.

7. The catalyst according to claim 5, wherein the aluminium oxide serving as a support for platinum and rhodium is stabilized with lanthanum oxide.

8. The catalyst according to claim 6, wherein the aluminium oxide serving as a support for platinum and rhodium is stabilized with lanthanum oxide.

9. The catalyst according to claim 6, wherein the second layer is in a concentration of 30 to 100 g/l volume of the honeycomb carrier.

10. The catalyst according to claim 8, wherein the second layer is in a concentration of 30 to 100 g/l volume of the honeycomb carrier.

11. A process for producing the catalyst according to claim 2, comprising suspending aluminium oxide and barium hydroxide in water, passing the barium hydroxide into solution, to form a suspension shifting the pH value of the suspension into a basic range, introducing an aqueous solution of a precursor of palladium into the suspension by capillary injection, with constant stirring, and coating the honeycomb carrier with the resulting suspension, drying and calcining.

12. A process for producing the catalyst according to claim 3, comprising suspending aluminium oxide and barium hydroxide in water, passing the barium hydroxide into solution, to form a suspension shifting the pH value of the suspension into a basic range, introducing an aqueous solution of a precursor of palladium into the suspension by means of capillary injection, with constant stirring, and coating the honeycomb carrier with the resulting suspension, drying and calcining.

13. A process for producing the catalyst according to claim 5 comprising forming a first coating by suspending aluminium oxide and barium hydroxide in water, passing the barium hydroxide into solution to form a suspension shifting the pH value of the suspension into a basis range, introducing an aqueous solution of a precursor of palladium into suspension by capillary injection, with the constant stirring, and coating the honeycomb carrier with the resulting suspension, and drying, and thereafter depositing a second catalytially active coating containing platinum and rhodium or aluminium oxide, an oxygen storage component and additional aluminium oxide to the first coating, drying and calcining.

14.A process for producing the catalyst according to claim 6 comprising forming a first coating by suspending aluminium oxide and barium hydroxide in water, passing the barium hydroxide into solution to form a suspension shifting the pH value of the suspension into a

basis range, introducing an aqueous solution of a precursor of palladium into suspension by capillary injection, with the constant stirring, and coating the honeycomb carrier with the resulting suspension, and drying, and thereafter depositing a second catalytially active coating containing platinum and rhodium or aluminium oxide, an oxygen storage component and additional aluminium oxide to the first coating, drying and calcining.

15. A starter catalyst for the purification of the exhaust gases from an internal combustion engine, comprising palladium and barium oxide on aluminum oxide, which catalyst is applied in the form of a coating to an inert honeycomb carrier, produced by a process comprising suspending aluminium oxide and barium hydroxide in water to form a suspension, whereby barium hydroxide passes into solution and shifts the pH value of the suspension into the basic range, introducing an aqueous solution of a precursor of palladium into the suspension by means of capillary injection, with constant stirring, and coating a honeycomb carrier with the resulting suspension, thereafter drying and calcining.

16. A process for the purification of the exhaust gases of a motor vehicle powered by an internal combustion engine, wherein a starter catalyst is disposed in a position close to the engine comprising passing said exhaust gases in contact with the catalyst according to claim 2 and thereafter contacting said exhaust gases with another catalyst.

17. A process for the purification of the exhaust gases of a motor vehicle powered by an internal combustion engine, wherein a starter catalyst is disposed in a position close to the engine comprising passing said exhaust gases in contact with the catalyst according to claim 3and thereafter contacting said exhaust gases with another catalyst.

18. The process according to claim 11 which is carried out in the absence of ammonia.

19. The process according to claim 11 further comprising adjusting solids content of said suspension to 25 to 60 wt. % of said suspension.

20. The process according to claim 11 wherein the aluminum oxide is stabilized with lanthanum oxide.

21. The catalyst according to claim 1 which has a size distribution of ± 0.5 nm.